Biomedicines, 2018, vol.6, N4

# Recombinant viruses for cancer therapy

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## Abstract

 Recombinant viruses are novel therapeutic agents that can be utilized for treatment of various diseases, including cancers. Recombinant viruses can be engineered to express foreign transgenes and have a broad tropism allowing gene expression in a wide range of host cells. They can be selected or designed for specific therapeutic goals; for example, recombinant viruses could be used to stimulate host immune response against tumor-specific antigens and therefore overcome the ability of the tumor to evade the host's immune surveillance. Alternatively, recombinant viruses could express immunomodulatory genes which stimulate an anti-cancer immune response. Oncolytic viruses can replicate specifically in tumor cells and induce toxic effects leading to cell lysis and apoptosis. However, each of these approaches face certain difficulties that must be resolved to achieve maximum therapeutic efficacy. In this review we discuss actively developing approaches for cancer therapy based on recombinant viruses, problems that need to be overcome, and possible prospects for further development of recombinant virus based therapy.

http://dx.doi.org/10.3390/biomedicines6040094

## Keywords

Cell therapy, Chimeric antigen receptor (CAR) T-cell therapy, Gene therapy, Oncolytic viruses, Recombinant viruses, Virus-based vaccines

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